

* SWBAT solve problems for free fall objects

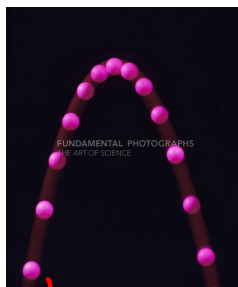
Sep 6-2:31 PM

Welcome!!!

H. Leslie Grebe

SECA Physics
Wednesday 15 October 2014

- * Pick up:
- slip of paper (for later)



Centering...

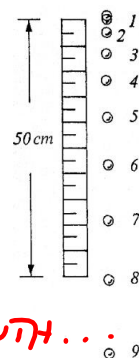
Opening Question:

What kinds of "direction" could velocity have?

LEFT / RIGHT UP / DOWN NORTH / SOUTH...

Do you think acceleration is a vector or not?

$a = \frac{\Delta v}{\Delta t}$ - VECTOR YES



Sep 7-7:04 AM

Catchy Physics Phrases: Speed, Velocity, Acceleration

Centering...

Speed is

Change in distance over
change in time

$$SPEED = \frac{\Delta d}{\Delta t}$$

Velocity is

Speed with direction

Acceleration is

Change in **velocity** over
change in time

$$a = \frac{\Delta v}{\Delta t}$$

Oct 4-7:27 AM

Of falling books and feathers...

- Make a prediction with brief explanation
- Make an observation

SPREAD OUT WASHERS

MADE AN EVEN SOUND ON PAN

LONGER OR FARTHER SOMETHING

FALLS, THE MORE DISTANCE IT COVERS PER SECOND

~~MORE MASS / WEIGHT HEAVIER~~

Book and Feather (boring):

LIGHT

SHAPE

Golf ball and ping pong ball:

HEAVY

LIGHT

SAME SHAPE / SIZE

SAME

SAME HEAVY
2 Kleenex.

! AIR RESISTANCE

So, how could we get book and feather to fall the same???

Terminal Velocity

Oct 5-7:33 AM

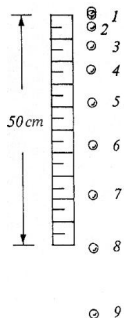
Gravity causes acceleration!

$$a = \frac{\Delta v}{\Delta t}$$

On earth, the acceleration is "g" = 10 m/s² down

"g" is the acceleration due to gravity

=> every second it speeds things up 10m/s

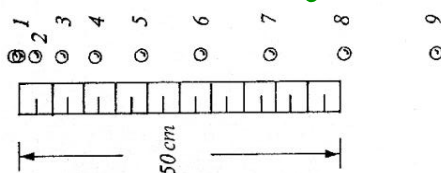
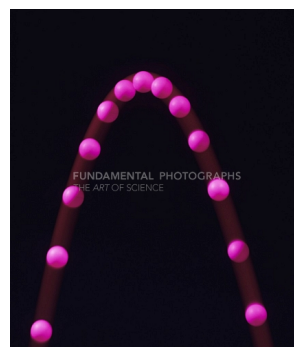
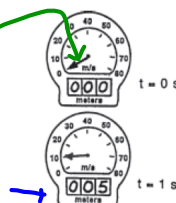


Rearranging the formula we get:

$$v = g \cdot t$$

And for distance it's:

$$d = \frac{1}{2} \cdot g \cdot t^2$$



Oct 5-8:33 AM

Daily 3 Questions

- * Every day except test/project days
- * 3 Questions on the topics of the day
- * Main source of daily points
- * I am happy to give credit when I have no concerns about someone giving or getting help with the answers.

You can't get your points if you don't have your **NAME!!!**

Name	Period
1.	
2.	
3.	

Sep 9-7:32 AM

1. "g" is the acceleration due to gravity. It means that for every second that passes, an object in free fall gains 10 meters per second of speed.

2. If a greyhound travels 160 meters in 10 seconds, what is its speed?

$$s = \frac{d}{t} = \frac{160\text{m}}{10\text{s}} = \boxed{16\text{ m/s}}$$

3. How far has an object fallen after the first 2 seconds?

$$d = \frac{1}{2}gt^2 = \frac{1}{2}(10)(2\text{s})^2 = \boxed{20\text{m}}$$

Oct 8-6:48 AM